What is claimed is:

1.   A system for processing an input signal, the system comprising:

- a predistortion subsystem for receiving said input signal and for producing a predistorted signal by applying a deliberate predistortion to said input signal; and

- a signal processing subsystem receiving and processing said predistorted signal and producing a system output signal,

wherein

- said predistortion subsystem distorts said input signal to compensate for distortions in said system output signal;

- said signal processing subsystem decomposes said predistorted signal into separate components, each of said separate components being processed separately; and

- said processing subsystem combines said components after processing to produce said system output signal.

2.   A system according to claim 1 wherein said signal processing subsystem comprises:

- a signal decomposer for decomposing said predistorted signal into at least two components;

- at least two signal component processor blocks, each signal processor block receiving an output of said signal decomposer and each signal processor block separately processes said output received from said signal decomposer; and

- a combiner receiving a processed output from each of said at least two signal component processor blocks, said combiner producing said system output signal from said processed outputs of said at least two signal component processor blocks.

3.   A system according to claim 2 wherein at least one of said at least two signal component processor blocks includes an amplifier.

4.   A system according to claim 3 wherein said amplifier is a non-linear amplifier.

13

5.   A system according to claim 1 wherein said system is part of a signal transmission system.

6.   A system according to claim 1 wherein at least some of said distortions are due to said combiner.

7.   A system according to claim 3 wherein said amplifier is a switch mode amplifier.

8.   A system according to claim 3 wherein said amplifier has a low output impedance.

9.   A system according to claim 1 wherein said deliberate predistortion includes magnitude distortions which adjust a magnitude of said input signal.

10.   A system according to claim 1 wherein said deliberate predistortion includes phase distortions which adjust a phase of said input signal.

11.   A system according to claim 1 wherein said deliberate predistortion is based on at least one entry in a lookup table.

12.   A method of processing an input signal to produce a system output signal, the method comprising:
    a) receiving said input signal
    b) applying a deliberate predistortion to said input signal to result in a predistorted signal
    c) decomposing said predistorted signal into at least two component signals
    d) combining said at least two component signals to produce said system output signal.

13.   A method according to claim 12 wherein said system output signal is an RF modulated version of said input signal.

14

14. A method according to claim 12 further including a processing step of separately processing each of said at least two component signals prior to step d).

15. A method according to claim 14 wherein said processing step includes amplifying at least one of said at least two component signals.

16. A method according to claim 14 wherein said processing step includes phase modulating at least one of said at least two component signals.

17. A method according to claim 12 wherein step a) further includes the step of accessing an entry in a lookup table, said deliberate predistortion being bases on said entry.

18. A method according to claim 17 wherein said deliberate predistortion is based on an interpolation of entries in said table.

19. A system according to claim 11 wherein said deliberate predistortion is based on an interpolation of entries in said table.